AMENDMENT

In the claims:

1.-75. (Canceled)

76. (New) A security device comprising two or more magnetic elements, wherein said magnetic elements are responsive to switch magnetisation state in response to an applied magnetic field to provide a characteristic response, wherein the elements are made of magnetically soft material that discretely switches magnetisation state at an applied field strength that depends upon inherent structural variations that are present in the magnetically soft material.

77. (New) The security device of Claim 76, wherein the security device stores a premeasured characteristic response.

78. (New) The security device of Claim 76, wherein said characteristic response represents an aggregate response of said magnetic elements to said applied magnetic field.

79. (New) The security device of Claim 76, wherein said magnetic elements are supported by a substrate.

80. (New) The security device of Claim 79, wherein said magnetic elements are supported on said substrate.

81. (New) The security device of Claim 76, wherein the magnetic elements comprise thin layer magnetic material.

82. (New) The security device of Claim 81, wherein the thin layers of magnetic material are less than 1 μm thick.

83. (New) The security device of Claim 82, wherein the thin layers of magnetic material between 10 nm and 100 nm thick.

84. (New) The security device of Claim 76, wherein said magnetic elements are responsive to said applied magnetic field to switch the magnetisation or magnetic polarisation of at least one of the magnetic elements.

85. (New) The security device Claim 76, wherein at least one of the magnetic elements comprises a magnetically soft material selected from one or more of: nickel, iron, cobalt and alloys thereof with each other or silicon, such as nickel iron alloy, cobalt iron alloy, iron silicon alloy or cobalt silicon alloy.

86. (New) The security device of Claim 85, wherein said magnetically soft material is a permalloy material.

87. (New) The security device of Claim 76, wherein at least one of the magnetic elements is substantially wire-shaped or flattened wire shaped.

88. (New) The security device of Claim 76, wherein the device comprises a generally parallel array of elongate rectangular magnetic elements.

89. (New) The security device of Claim 88, wherein the magnetic elements comprise an array of generally parallel magnetic nanowires.

90. (New) The security device of Claim 76, wherein the magnetic elements have generally the same size and/or shape.

91. (New) The security device of Claim 76, wherein several discrete groups of differently sized and/or shaped magnetic elements, the magnetic elements being generally similarly sized and/or shaped within each group, are provided so that several different switching fields can be identified.

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92. (New) The security device of Claim 91, comprising an ensemble of rectangular magnetic elements in parallel array including several discrete groups of magnetic elements of different widths.

93. (New) The security device of Claim 76, wherein differently sized and/or shaped magnetic elements are provided in a continuously varying array, so that variations in sized and/or shape between a magnetic element and its neighbours are minimised to avoid large discontinuities.

94. (New) The security device of Claim 93, comprising an ensemble of rectangular magnetic elements in parallel array of width varying continuously across the array.

95. (New) The security device of Claim 76, further comprising a single relatively large area magnetic element for use as a reference element.

96. (New) The security device of Claim 76, wherein at least one of the magnetic elements is backed by a light reflective layer.

97. (New) The security device of Claim 76, wherein at least one of the magnetic elements is provided proximal a reduced light reflectivity portion of said security device.

98. (New) The security device of Claim 76, wherein the magnetic elements are arranged to provide a linear pattern.

99. (New) The security device of Claim 76, wherein said magnetic elements are arranged to provide a two-dimensional pattern.

100. (New) The security device of Claim 76, further comprising a unique identifier incorporated therewith.

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101. (New) The security device of Claim 100, wherein said unique identifier is provided by way of one or more of: an optically readable bar code; one or more optical indicia; a magnetically encoded identifier; and an electronic identifier.

102. (New) The security device of Claim 101, mounted upon a smart-card, wherein said electronic identifier is provided by a smart-card chip provided on said smart-card.

103. (New) The security device of Claim 76, wherein premeasured characteristic response information representing one or more measurable parameters of said characteristic response is stored on said security device.

104. (New) The security device of Claim 103, wherein said premeasured characteristic response information is in encrypted form.

105. (New) The security device of Claim 104, wherein said premeasured characteristic response information is encrypted using an asymmetric encryption algorithm with the private key used for enciphering being kept secret and the public key used for deciphering being made available to any reader of the security device.

106. (New) The security device of Claim 77, wherein the premeasured characteristic response is stored in machine-readable form.

107. (New) A method of manufacturing a security device, comprising:

providing two or more magnetic elements made of magnetically soft material having random variations introduced into the magnetically soft material during fabrication, wherein said magnetic elements discretely switch magnetisation state in response to an applied magnetic field in order to generate a characteristic response.

108. (New) The method of Claim 107, comprising providing said magnetic elements on a substrate.

109. (New) The method of Claim 107, comprising forming at least one of the magnetic elements using a lift off or wet etching process.

110. (New) The method of Claim 107, comprising forming at least one of the magnetic elements using an ion beam etching process.

111. (New) The method of Claim 107, comprising measuring the magnitude(s) of one or more magnetic parameters of said magnetic elements.

112. (New) The method of Claim 111, comprising measuring one or more of coercivity and jitter values.

113. (New) The method of Claim 111, comprising using the measured magnitude(s) of said one or more magnetic parameters to represent premeasured characteristic response information.

114. (New) The method of Claim 113, comprising encrypting said premeasured characteristic response information.

115. (New) The method of Claim 113, comprising storing said premeasured characteristic response information in encrypted or unencrypted form on said security device.

116. (New) The method of Claim 113, comprising storing said premeasured characteristic response information in encrypted or unencrypted form in a storage medium remote from said security device.

117. (New) The method of Claim 116, comprising storing said premeasured characteristic response information in encrypted or unencrypted form in a database.

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118. (New) The method of Claim 107, further comprising providing said security device with a unique identifier.

119. (New) The method of Claim 98 comprising: using the measured magnitude(s) of said one or more magnetic parameters to represent premeasured characteristic response information, and storing a representation of said unique identifier in association with said premeasured characteristic response information.

120. (New) A system for reading a security device, comprising:

a magnetic field generation system for applying a magnetic field to a security device comprising two or more magnetic elements, wherein said magnetic elements are responsive to switch magnetisation state in response to an applied magnetic field to provide a characteristic response, wherein the elements are made of magnetically soft material that discretely switches magnetisation state at an applied field strength that depends upon inherent structural variations that are present in the magnetically soft material;

a detection system for measuring one or more discrete magnetisation switching parameters representative of a measured characteristic response of said security device generated in response to said magnetic field,

wherein said system is operable to compare said one or more discrete magnetisation switching parameters representative of a measured characteristic response to one or more respective parameters of a premeasured characteristic response to determine whether respective measured and premeasured parameters are substantially equivalent.

121. (New) The system of Claim 120, wherein said measured characteristic response and said premeasured characteristic response are representative of an aggregate response produced by said two or more magnetic elements.

122. (New) The system of Claim 120, wherein the magnetic field generation system is operable to apply a time varying magnetic field to a security device.

123. (New) The system of Claim 120, wherein a light beam is used to interrogate said security device.

124. (New) The system of Claim 123, wherein said light beam is a visible or near-infrared beam produced by a laser diode.

125. (New) The system of Claim 120, wherein said parameters represent one or more of coercivity and jitter values.

126. (New) The system of Claim 123, wherein said detection system incorporates magneto-optic Kerr effect detection apparatus for detecting changes induced in said light beam by magnetic elements of said security device.

127. (New) The system of Claim 126, wherein said magneto-optic Kerr effect detection apparatus is configured to operate in transverse mode.

128. (New) The system of Claim 120, further operable to deflect said light beam across the surface of said security device.

129. (New) The system of Claim 120, further operable to read a unique identifier from said security device.

130. (New) The system of Claim 129, wherein said unique identifier is identified by reading one or more of: an optically readable bar code; one or more optical indicia; a magnetically encoded identifier; and an electronic identifier.

131. (New) The system of Claim 120, further operable to determine said one or more respective parameters of the premeasured characteristic response by reading said one or more parameters from said security device.

132. (New) The system of Claim 120, further operable to determine said one or more respective parameters of the premeasured characteristic response by reading said one or more parameters from a database.

133. (New) The system of Claim 132, wherein said database is remotely located from said detection system.

134. (New) The system of Claim 120, further operable to decrypt premeasured characteristic response information where it is read or provided in encrypted form.

135. (New) A method for reading a security device comprising two or more magnetic elements, wherein said magnetic elements are responsive to switch magnetisation state in response to an applied magnetic field to provide a characteristic response, wherein the elements are made of magnetically soft material that discretely switches magnetisation state at an applied field strength that depends upon inherent structural variations that are present in the magnetically soft material, the method comprising:

applying a magnetic field to a security device comprising two or more magnetic elements made of magnetically soft material;

measuring one or more discrete magnetisation switching parameters representative of a measured characteristic response of said security device generated in response to said magnetic field; and

comparing said one or more discrete magnetisation switching parameters representative of a measured characteristic response to one or more respective parameter(s) of a premeasured characteristic response to determine whether respective measured and premeasured parameters are substantially equivalent.

136. (New) The system of Claim 135, wherein said measured characteristic response and said premeasured characteristic response are representative of an aggregate response produced by said two or more magnetic elements.

137. (New) The method of Claim 135, comprising applying a time varying magnetic field to a security device.

138. (New) The method of Claim 135, wherein measuring of one or more parameters representative of a measured characteristic response of said security device generated in response to said magnetic field comprises measuring one or more of coercivity and jitter values.

139. (New) The method of Claim 135, comprising interrogating said security device using a light beam.

140. (New) The method of Claim 135, comprising operating a laser to produce a visible or near-infrared beam.

141. (New) The method of Claim 139, comprising detecting changes induced in said light beam by magnetic elements of said security device using the magneto-optic Kerr effect.

142. (New) The method of Claim 141, comprising using the magneto-optic Kerr effect transverse mode.

143. (New) The method of Claim 135, comprising reading a unique identifier from said security device.

144. (New) The method of Claim 143, comprising identifying said unique identifier by reading one or more of: an optically readable bar code; one or more optical indicia; a magnetically encoded identifier; and an electronic identifier.

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145. (New) The method of Claim 135, comprising determining said respective one or more parameters of the premeasured characteristic response by reading said one or more parameters from said security device.

146. (New) The method of Claim 135, comprising determining said one or more respective parameters of the premeasured characteristic response by reading said one or more parameters from a database.

147. (New) The method of Claim 146, comprising accessing a database remotely located from said detection system.

148. (New) The method of Claim 135, further comprising decrypting premeasured characteristic response information where it is read or provided in encrypted form.

149. (New) A product comprising a security device comprising two or more magnetic elements, wherein said magnetic elements are responsive to switch magnetisation state in response to an applied magnetic field to provide a characteristic response, wherein the elements are made of magnetically soft material that discretely switches magnetisation state at an applied field strength that depends upon inherent structural variations that are present in the magnetically soft material.

150. (New) The product of Claim 149, comprising one or more of: a document; a passport; an identity card; a compact disc; a digital versatile disc; a software product; packaging; an item of clothing; an item of footwear; a smart-card; a credit or bank card; a cosmetic item; an engineering part; an accessory; and any other goods and/or items of commerce, whether manufactured or otherwise.